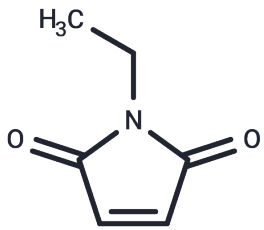
Data Sheet (Cat.No.T3088)

TargetMol

N-Ethylmaleimide

Chemical Properties



CAS No. : 128-53-0

Formula: C6H7NO2

Molecular Weight: 125.13

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	N-Ethylmaleimide (NEM) is a reagent for alkylation of free sulfhydryl groups, a cysteine protease inhibitor used in experimental biochemistry. N-Ethylmaleimide is also a deubiquitinating enzyme inhibitor that specifically inhibits phosphate transport in mitochondria.
Targets(IC50)	Apoptosis,Cysteine Protease,DUB
In vitro	**METHODS**: Growth-arrested VSMC cells were treated with N-Ethylmaleimide (20 μM) and PDGF-BB (20 ng/mL) for 5 min - 2 h, and the expression levels of target proteins were detected by Western Blot. **RESULTS**: N-Ethylmaleimide inhibited PDGF BB-stimulated Akt phosphorylation. [1] **METHODS**: Jurkat T cells were treated with N-Ethylmaleimide (3-100 μM) for 1-20 min, and target protein expression levels were detected by immunoblots. **RESULTS**: Treatment of intact cells with 50-100 μM N-Ethylmaleimide for 5-10 min resulted in a significant increase in tyrosine residue phosphorylation. [2]
In vivo	**METHODS**: To examine the potential enhancement of sleep properties induced by alprazolam (Alp), N-Ethylmaleimide (1 mg/kg, 1% CMC-Na) and Alp (1.84 mg/kg, 1% CMC-Na) were administered by gavage to C57BL/6J mice. **RESULTS**: Combined administration of Alp and NEM significantly reduced sleep latency and prolonged sleep duration compared with Alp alone. This effect was characterized by a significant increase in REM duration. [3]

Solubility Information

Solubility	DMSO: 237.5 mg/mL (1898.03 mM),Sonication is recommended. H2O: 50 mg/mL (399.58 mM),Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	5% DMSO+95% Saline: 1.2 mg/mL (9.59 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.9917 mL	39.9584 mL	79.9169 mL
5 mM	1.5983 mL	7.9917 mL	15.9834 mL
10 mM	0.7992 mL	3.9958 mL	7.9917 mL
50 mM	0.1598 mL	0.7992 mL	1.5983 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Yellaturu CR, et al. N-Ethylmaleimide inhibits platelet-derived growth factor BB-stimulated Akt phosphorylation via activation of protein phosphatase 2A. J Biol Chem. 2002 Oct 18;277(42):40148-55.
Hussain M, Lu Y, Tariq M, et al. A small-molecule Skp1 inhibitor elicits cell death by p53-dependent mechanism. Iscience. 2022, 25(7): 104591.
Ren W, Xu Z, Chang Y, et al.Pharmaceutical targeting of OTUB2 sensitizes tumors to cytotoxic T cells via degradation of PD-L1.Nature Communications.2024, 15(1): 9.
Ståhls A. The sulfhydryl reagent N-ethylmaleimide induces hyperphosphorylation on tyrosine residues in the Jurkat T-cell line. Biochem Biophys Res Commun. 1992 Aug 31;187(1):73-8.
Zhu S, et al. Combination administration of alprazolam and N-Ethylmaleimide synergistically enhances sleep behaviors in mice with no potential CNS side effects. PeerJ. 2024 May 7;12:e17342.
Shao Z, Liu S, Sun W, et al.SENP3 mediates deSUMOylation of SIX1 to promote prostate cancer proliferation and migration.Cellular & Molecular Biology Letters.2024, 29(1): 1-20.
Zhang X L, Yue H W, Liu Y J, et al.Designer polyQ fusion proteins sequester USP7/HDM2 for modulating P53 functionality.iScience.2025